

AMENDMENTS TO THE CLAIMS

Claim 1. (Currently amended) A method for pathogen detection for a targeted biological sample, composed of sequential operations comprising the steps of:

providing a multiplicity of optically encoded microbeads,

providing said microbeads with a capture ligand,

providing said microbeads with bioagent-specific antibodies,

containing said optically encoded microbeads,

adding a sample ~~and capture ligand to the~~ said contained microbeads,
said sample possibly containing said targeted biological sample,

placing ~~the~~ said contained microbeads and said sample in a mixing holder for sufficient time for a said targeted biological sample to adequately bind ~~the~~ said microbeads,

adding fluorescent labeled antibodies to said contained microbeads and said sample for attachment to ~~the microbead bound sample~~ said bioagent-specific antibodies,

attaching ~~the~~ at least some of said microbeads to a disposable capture substrate containing an array of attachment sites for attaching ~~the~~ said microbeads thereto,

washing ~~the~~ said substrate and attached microbeads, ~~and~~

inserting ~~the~~ said substrate into an optical detection system, and

~~for~~ optically decoding ~~the~~ said microbeads for identification and measurement of ~~the target~~ said targeted biological sample.

Claim 2. (Currently amended) The method of Claim 1, wherein said step of containing the said microbeads is carried out by placing ~~the~~ said microbeads in a cuvet.

Claim 3. (Currently amended) The method of Claim 1, additionally including the step of vibrating the said mixing holder during the said time ~~the~~ said contained microbeads are placed therein.

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Claim 4. (Currently amended) The method of Claim 1 additionally including the step of designing each of the pattern said array of attachment sites on a dipstick to capture a single microbead.

Claim 5. (Currently amended) The method of Claim 1, additionally including the step of locating the said patterned array of attachment sites on ~~the~~ said substrate at a spatial distance between each said array as determined by a resolution of ~~the said~~ optical detection system.

Claim 6. (Currently amended) The method of Claim 1, wherein said step of washing the said substrate is carried out to improve the sensitivity of the detection process by removing from the substrate surface all unbound biological constituents and reducing the background solution fluorescence.

Claim 7. (Currently amended) The method of Claim 1, wherein said step of containing the said microbeads is carried out by placing ~~the said~~ microbeads in a disposable bead pack.

Claim 8. (Currently amended) The method of Claim 1, additionally including the step of providing each said microbead with a different color and containing a substrate capture point and an assay.

Claim 9. (Currently amended) The method of Claim 1, additionally including the step of processing each said microbead to contain a capture ligand, and a bioagent-specific antibody, and with certain of the microbeads also having a target species bound thereto, and a fluorescent labeled antibody attached thereto.

Claim 10. (Cancelled)

Claim 11. (Cancelled)

Claim 12. (Cancelled)

Claim 13. (Cancelled)

Claim 14. (Cancelled)

Claim 15. (Cancelled)

Claim 16. (Cancelled)

Claim 17. (Cancelled)

Claim 18. (Cancelled)

Claim 19. (Cancelled)

Claim 20. (Cancelled)

Claim 21. (Cancelled)

Claim 22. (Cancelled)

Claim 23. (Cancelled)

Claim 24. (Cancelled)

Claim 25. (Cancelled)

Claim 26. (Cancelled)

Claim 27. (Cancelled)

Claim 28. (Cancelled)

Claim 29. (Cancelled)

Claim 30. (Cancelled)

Claim 31. (Cancelled)

Claim 32. (Cancelled)

Claim 33. (Cancelled)

Claim 34. (Cancelled)

Claim 35. (Cancelled)

Claim 36. (Currently amended) The method of Claim 1, additionally including the step of providing the said contained microbeads from the group

consisting of optically encoded microbeads, charged microbeads, and microbeads with optically encoded shells.

Claim 37. (Currently amended) The method of Claim 1, wherein said step of attaching the said microbeads is carried out in an ordered array.

Claim 38. (Currently amended) The method of Claim 1, wherein said step of attaching the said microbeads is carried out in a disordered array.

Claim 39. (Currently amended) The method of Claim 1, wherein said step of attaching the said microbeads to a disposable capture substrate is carried out by providing the said substrate with a plurality of wells or an array of channels.

Claim 40. (Currently amended) The method of Claim 1, wherein said step of attaching the said microbeads is carried out by an array of magnetic or electrode capture pads.

Claim 41. (Currently amended) A method for pathogen detection for biological molecules, composed of sequential operations comprising the steps of:

providing containing a quantity of optically encoded microbeads,
adding a sample and capture legend ligand to the contained said
microbeads,

adding bioagent-specific antibodies to said microbeads,

containing said microbeads,

adding a sample to said contained microbeads, said sample possibly containing said biological molecules,

adding fluorescent labeled antibodies for attachment to a microbead bound sample said bioagent specific antibodies,

providing a disposable capture substrate containing an array of attachment sites for attaching the said microbeads thereto,

inserting the said disposable capture substrate containing the an array of attachment sites into the said contained microbeads for capturing the said microbeads, and

washing said substrate and said microbeads,

inserting the said disposable capture substrate into a detection system, and

optically ~~for~~ decoding the said microbeads for identification and measurement of said biological molecules attached to the said microbeads.

Claim 42. (Currently amended) The method of Claim 41, additionally including the step of forming the said contained ~~quantity of~~ microbeads to be optically encoded.

Claim 43. (Currently amended) The method of Claim 42, wherein said step of decoding of the said microbeads is carried out in an optical detecting system.
